

**AMENDMENTS TO THE SPECIFICATION:**

On page 1, after the title and before the first paragraph of the specification, please insert the following new heading:

**BACKGROUND**

Please replace the heading on page 1, line 2 with the following new heading:

1. **Technical Field**

Please replace the heading on page 1, line 11, with the following new heading:

2. **Related Art**

Please replace the heading on page 6, line 5 with the following new heading:

**SUMMARY**

Please replace the paragraph beginning on page 6, line 11, with the following amended paragraph:

According to the present ~~invention~~ exemplary embodiment, there is provided a method of operating an information retrieval system for retrieving information from a database in response to queries submitted by a user, said method comprising the steps of:

Please replace the paragraph beginning on page 7, line 1 with the following amended paragraph:

Also according to the present ~~invention~~ exemplary embodiment, there is provided an information retrieval system for retrieving information from a database in response to queries submitted by a user, said system comprising:

Please replace the heading on page 8, line 5 with the following new heading:

BRIEF DESCRIPTION OF THE DRAWINGS

Please replace the heading on page 8, line 15 with the following new heading:

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

Please replace the paragraph beginning on page 9, line 17 and continuing to page 10, line 13, with the following amended paragraph:

Referring now to Figure 3, the flow-chart shows in simplified form the submission of related search queries using Lexical Chains according to an embodiment of the present invention, in order to highlight how this differs from the prior art described above. Such embodiments aim to improve the precision accuracy of information retrieval systems, in particular where a user submits consecutive queries in a single domain or of related semantic concepts, by disambiguating keyword senses given by the user. The disambiguation may be done fully automatically, or may be achieved interactively, with the co-operation of the user. According to the embodiment, the search engine receives the user's first query ("Query 1") and using a chosen Lexical Chaining algorithm, derives from it a set of mutually exclusive lexical chains, which represent different possible interpretations of the user's query. The chosen Lexical Chaining algorithm may be of a known type, such as that proposed by Barzilay (see earlier), or may be specifically created for the embodiment. Any possible ambiguity in the user's query will be reflected in the set having more than member. Prior to the first query of a session, or to the first of a series of related queries, a temporary storage area of memory (in a computer system having a processor executing search engine program code and having typical user input/output ports), which will be referred to as the Lexical Chain blackboard, should be empty. The lexical chains

derived in respect of the user's initial query are added to the Lexical Chain blackboard. The search engine uses a search algorithm to map these lexical chains onto a database of documents, and a set of documents which "match" according to certain criteria are returned. A variety of search algorithms may be used, but a preferred algorithm for the purposes of this embodiment of the invention is one which allows documents themselves indexed according to semantic concepts, using lexical chains for example, or meta-data relating to such documents, to be searched with reference to such semantic concepts. The documents identified according to the chosen algorithm or criteria, or reference information relating to such documents, may then be presented as "results" to the user, and the lexical chains representing the returned documents may then be automatically merged with those already present on the blackboard. This process of merging the lexical chains increases the outcome of a scoring function for each mutually exclusive set. In other words, the merging assists in disambiguating the lexical chains present on the blackboard. As explained above, an algorithm based on, or similar to, the Barzilay algorithm referred to above is particularly suitable for this because it allows multiple hypotheses to be maintained that can be updated progressively.

Before the listing of the claims, at the top of page 13 of the specification, please delete the word "CLAIMS" and insert therefore --WHAT IS CLAIMED IS:--